LISTING OF CLAIMS

1 (Currently Amended). A wireless communication system, the system comprising:

a plurality of Remote Radio Units (RRUs), each including a packet transceiver module ~~systems~~, each transceiver module located at one of a plurality of cell sites in said wireless communication system, each of said ~~first~~ transceiver modules communicatively coupled to a hub via a first transport communication medium, said first transport communication medium transporting information in form of packetized bit streams, said transceiver modules being ~~and~~ configured to receive RF radio signals over a wireless link and process the received RF signals to produce packetized demodulated bit streams for transmission over the ~~first~~ transport communication medium;

~~a~~ the hub ~~comprising~~ including:

at least one traffic consolidator unit (TCU) configured to receive the packetized demodulated bit streams transmitted by the packet transceiver systems via the first transport communication medium and process the received digital packetized demodulated bit streams to reproduce the RF radio signals transmitted over said wireless link; and

a base transceiver station (BTS) communicatively coupled to ~~said~~ a second transceiver module and configured to process the reproduced RF radio signal to produce a corresponding T1/E1 signal on said second transceiver module; and

a mobile switching office (MSO) in communication with the hub via a second transport communication medium and configured to receive and process the T1/E1 signal to produce a channelized circuit-switched T1/E1 signal.

2 (Previously Presented). The wireless communication system of Claim 1, wherein the first and second transport communication mediums are Ethernet over copper traffic flow.

3 (Previously Presented). The wireless communication system of Claim 1, wherein the first and second transport communication mediums are optical fiber rings.

4 (Previously Presented). The wireless communication system of Claim 3, wherein the optical fiber ring is a SONET/SDH ring.

5 (Presently amended). The wireless communication system of Claim 3, wherein the optical fiber ring is ~~a Gigabit Ethernet ring~~ a Gigabit Ethernet Resilient Packet Ring with Quality of Service (QoS) priorities..

6 (Previously Presented). The wireless communication system of Claim 3, wherein the fiber optic ring is a 10 Gigabit Ethernet ring.

7(Previously Presented). The wireless communication system of Claim 1, further comprising a plurality of remote cell site antennas disposed at said plurality of cell sites, said antennas coupled to said packet transceiver systems and configured to transmit said RF radio signal from mobile users over said wireless link to said packet transceiver systems.

8 (Currently Amended). The wireless communication system of Claim [[8]] 1, wherein the cell site antennas are equipped with smart technology.

9 (Currently Amended). The wireless communication system of Claim [[9]] 1, wherein the cell site antennas are configured to detect changes in RF capacity in the network.

10 (Previously Presented). The wireless communication system of Claim 1, wherein each packet transceiver system further comprises:

an RF front end module configured to receive an RF signal, down-convert the received RF signal and forward the down-converted RF signal to an A/D module;

a programmable antenna card (PAC) configured to demodulate an RF signal to extract a digital bit stream;

a plurality of Input/Output (I/O) modules;

a control and switching module configured to manage operations within the first transceiver unit;

an integrated test and performance module configured to collect network performance data to facilitate network installation and troubleshooting;

a gigabit Ethernet card configured to groom data traffic channels and control channels into GigE/RPR traffic flows in accordance with bandwidth requirements for the respective channels.

11 (Previously Presented). The wireless communication system of Claim 1, wherein the traffic consolidator unit comprises:

a control shelf comprising:

a system control module;

an independent switching fabric;

an integrated test and performance monitoring card; and

a plurality of input/output (I/O) cards;

a bearer shelf configured to perform bearer channel processing, switching, testing, performance monitoring and transport.

12 (Previously Presented). The wireless communication system of Claim 11, wherein the traffic consolidator unit further comprises an application server shelf configured to support a plurality of customized software applications.

13 (Currently Amended). The wireless communication system of Claim 12, wherein the customized software applications comprise:

said ~~a~~ continuous network optimization (CNO) application for continuously monitoring network performance indicators and automatically provisioning sufficient bandwidth in response;

a testing/performance monitoring application and a network rerouting application for facilitating near/far-end testing, setup, installation, and troubleshooting; and

a network re-routing application to automate spectrum and network optimization processes.

14 (Previously Presented). The wireless communication system of Claim 13, wherein the network performance indicators are derived from the application processor and the integrated test and performance monitoring card.

15 (Previously Presented). The wireless communication system of Claim 13, wherein a local version the CNO application is resident in each of said packet transceiver systems and traffic consolidator units in the system.

16 (Currently Amended). The wireless communication system of Claim 13, wherein the CNO application is comprised of said three sub-processes:

an RF capacity detection (RFCD) sub-process configured to determine if an increase/decrease in RF capacity is required in the network;

a network capacity detection and adjustment (NCDA) sub-process configured to utilize the RF capacity status information obtained from the RFCD

sub-process to determine if an increase/decrease in network-side capacity is required in the network; and

a baseband processing distribution and adjustment (BPDA) sub-process configured to utilize the RF capacity and network status information obtained from the RFCD and NCDA processes to determine what level of baseband resources are required.

17 (Currently Amended). A method for transporting digital bit streams extracted from radio frequency (RF) signals between antennas and processing elements in a wireless communications network, the method comprising:

receiving a RF (Radio Frequency) signal at a packet transceiver system over a wireless link via an antenna, said first transceiver located at one of a plurality of remote cell sites;

processing the received RF signal by a continuous network optimization (CNO) at said packet transceiver system and to produce a packetized demodulated bit stream supporting serial transmission of the bit stream over a first transport communication medium;

transmitting the bit stream over the first transport communication medium to a traffic consolidator unit located at a hub in the network;

upon receipt of the transmitted bit stream at the traffic consolidator unit, processing the received bit stream at the traffic consolidator unit to re-produce the RF signal received at the packet transceiver system;

providing the reproduced RF signal as an input to a base transceiver station (BTS) located at said hub;

processing the reproduced RF signal at the BTS to produce a T1/E1 signal;

providing the T1/E1 signal as an input to the traffic consolidator unit;

packetizing the T1/E1 signal at the traffic consolidator unit to produce a packetized T1/E1 signal;

transmitting the packetized T1/E1 signal over a second transport communication medium to a mobile switching office (MSO); and

upon receipt of transmitted bit stream at the MSO, processing the received packetized T1/E1 signal to produce a channelized circuit-switched T1/E1 signal.

18 (Previously Presented). The method according to Claim 17, wherein the RF signal is transmitted from a mobile station over the air to the first transceiver unit via a fixed RF antenna device.

19 (Previously Presented). The method according to Claim 17, wherein the first and second transport communication mediums are one of a fiber optic link and a high-speed copper pair(s).

20 (Previously Presented). The method according to Claim 17, wherein the act of processing the received RF signal at the packet transceiver system, further comprises the acts of:

demodulating the RF signal to extract bit information;

constructing said packetized demodulated bit stream in accordance with a digital packet transport protocol;

prioritizing said packetized demodulated bit stream in accordance with pre-determined policies;

optionally routing said prioritized and packetized demodulated bit stream in accordance with applied policies;

applying said policies to automatically adjust bandwidth utilization parameters and baseband processing capacity based on real-time network conditions.

21 (Previously Presented). The method according to Claim 20, further comprising inserting transit priority coding based on said prioritization.

22 (Previously Presented). The method according to Claim 20, wherein said, policies are created for scheduled and unscheduled localized events and for loss of network resources.

23 (Previously Presented). The method according to Claim 22, wherein said policies are managed by a policy management module configured to receive

network status information from a CNO application and responsively issue requests for network changes to the CNO application.

24 (Currently Amended) A method for automatically adjusting network bandwidth in response to a change in RF activity in the network, the method comprising:

monitoring a plurality of network parameters related to RF capacity using a continuous network optimization (CNO) application that includes three sub-processes that continuously monitors network performance indicators for automatically provisioning sufficient bandwidth and determining what level of baseband resources are required;

determining if an increase/decrease in RF activity has occurred based on said monitored parameters; and

said CNO automatically adjusting the bandwidth between one of the following sites, Cellsite and hub, Hub to MSO, hub to hub or MSO to MSO.

25 (Previously Presented). The method of Claim 24, wherein the plurality of network parameters comprise: a first parameter for monitoring an RF signal after conversion to a digital signal, a second parameter for monitoring an RF front end and/or antenna presence, a third parameter for monitoring all active carriers, a fourth parameter for monitoring active/idle network channels, a fifth parameter for monitoring a network congestion level and a sixth parameter for monitoring event triggered alarms.

26 (New). A wireless communication system comprising:

at least one transport communication medium adapted to generate bidirectional digital information in form of packetized bit streams arranged in accordance with an IP protocol;

a plurality of cells, each cell including a RF antenna in wireless communication with a plurality of mobile devices, a packet transceiver system connected to said transport medium, said packet transceiver system exchanging RF signals with said antenna and exchanging corresponding packetized bit streams with said one transport medium; and

a hub coupled to said transport medium, said hub receiving packetized bit streams from said packet transceiver systems, converting said packetized bit stream into converted signals and transmitting said converted signals to other devices for processing.

27 (NEW). The system of claim 26 wherein said hub includes at least a base station adapted to handle RF signals wherein said hub translates said packetized bit streams into RF signals for said base station.

28(NEW). The system of claim 26 wherein said transport communication media is one of a Ethernet copper wire and an Ethernet optical fiber.

29 (NEW). The system of claim 26 wherein each packet transceiver system includes a signal conditioner for conditioning the packetized bit streams based on Quality of Service rules.

30 (NEW). The system of claim 26 wherein said transport communication media forms a communication ring connected to each of said packet transceivers, with the packaged data streams traveling through the ring being combined from signals from each of the cells.